

*Chapter 2: The Anatomy of an Immune Response*  
*Biol 194 Seminar Questions*

**This is a stamped assignment to be completed *before* attending seminar. Pay attention to the following discussion questions as you read chapter 2. Write responses to each question on *separate paper* along with the page number(s) where you found that info.**

**1. Passive Immunity**

- a. What is passive immunity (passive immunization)?
- b. How was it discovered?
- c. How/why does it work?

**2. The Antibody Response (also known as Humoral Immunity)**

- a. What is humor immunity (antibody response)? How does it work?
- b. What are the four cardinal features of humoral immunity?

**3. T-Cells: The 2<sup>nd</sup> arm of the immune system (also known as cell-mediated immunity)**

- a. How did the work of Glick and Chang lead to the discovery of T-cells?
- b. Explain the roles played by each of the following
  - i. Helper T-Cells (CD4 T-Cells)
  - ii. Killer T-Cells (CD8 T-Cells)
- c. What kinds of cells do killer T-cells kill. How do they kill them?
- d. Why does HIV affect both antibody production and killer T-cell activity?

**4. The Lymphatic System**

- a. What is the lymphatic system?
- b. What are the major functions of the lymphatic system?
- c. What is the functional significance of concentrating macrophages, T-cells and B-cells in lymph nodes?
- d. Why might a physician remove and examine the lymph nodes near a tumor in a patient they plan treat for cancer?
- e. Suppose while playing with a friend's kitten, the kitten scratched you on the hand, breaking the skin and infecting you with various types of bacteria and viruses. List the sequence of events that would occur to help protect you from bacterial and viral infection.

**5. The Bone Marrow and the Thymus**

- a. Where are all blood cells produced in the body? Explain the role played by blood stem cells in the formation of red blood cells and all T-cells and B-cells.
- b. Why does chemotherapy affect immune function in cancer patients?
- c. Why would a bone marrow transplant soon after irradiation save the life of a person that has been exposed to a lethal dose of whole-body radiation?
- d. Explain why removal of the thymus early in life (i.e. at the time of birth) will result in loss of immune function later in life, but removal of the thymus later in life has little impact on immune function.

**6. List any questions that you may have concerning the material/concepts in chapter 2.**